

What is claimed is:

1. A photoluminescent aluminate comprising:
alloy base material including strontium, and a dopant comprising one or more lanthanide earth elements and a transition metal element.
2. A photoluminescent aluminate as recited in claim 1, wherein said lanthanide earth elements comprise europium and dysprosium.
3. A photoluminescent aluminate as recited in claim 1, wherein said lanthanide earth elements comprise europium, dysprosium and gadolinium.
4. A photoluminescent aluminate as recited in claim 1, wherein said base alloy material further includes Boron.
5. A photoluminescent aluminate as recited in claim 1, wherein said base alloy material comprises SrAl_2O_4 .
6. A photoluminescent aluminate as recited in claim 1, wherein the transition metal element is scandium.
7. A photoluminescent aluminate as recited in claim 6, wherein the scandium comprises about 0.01 to 3.0 mole percent.
8. A photoluminescent aluminate as recited in claim 1, wherein the base alloy material comprises $\text{Sr}_4\text{Al}_{14}\text{O}_{25}$.
9. A photoluminescent aluminate as recited in claim 1, wherein the base alloy material comprises SrAl_4O_7 .
10. A photoluminescent aluminate as recited in claim 6, wherein the base alloy material comprises $\text{Sr}_4\text{Al}_{14}\text{O}_{25}$.
11. A photoluminescent aluminate as recited in claim 6, wherein the base alloy material comprises SrAl_4O_7 .
12. A photoluminescent aluminate comprising $\text{SrAl}_2\text{O}_4\cdot\text{Eu,Dy,Gd,Sc}$ wherein the following materials and quantities are combined:

SrCO_3 (1.0 mole)
 Al_2O_3 (1.0 mole)
 Eu_2O_3 (0.005 mole)
 Dy_2O_3 (0.01 mole)
 Gd_2O_3 (0.005 mole)
 Sc_2O_3 (0.005 mole)
 B_2O_3 (0.2 mole)

13. A photoluminescent aluminate as recited in claim 12, wherein said SrCO_3 and Al_2O_3 are combined to form $\text{SrAl}_2\text{O}_4 + \text{O}_3$.

14. A photoluminescent aluminate as recited in claim 13, wherein said SrAl_2O_4 is heat treated prior to being combined with the remaining material at approximately 1300°C .

15. A photoluminescent aluminate as recited in claim 13, wherein said SrAl_2O_4 is heat treated prior to being combined with the remaining material at approximately 1450°C .

16. A photoluminescent aluminate comprising $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu,Dy,Sc}$ wherein and $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu,Sc}$ according to the method described above wherein the following materials and quantities are combined:

SrCO_3 (4.0 mole)
 Al_2O_3 (7.0 mole)
 Eu_2O_3 (0.005 mole)
 Dy_2O_3 (0.01 mole)
 Sc_2O_3 (0.005 mole)
 B_2O_3 (0.2 mole)